Amendments to the Claims:

The listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently amended) A co-verification interface ~~that interfaces with either a physical system element or a virtual system element and is implemented in a design verification system comprising at least two system elements of physical system elements and virtual system elements and a communication system, the co-verification interface~~ comprising:

an application layer having a plurality of communication connections configured to communicate with a first system element of ~~the~~ a design verification system, wherein the design verification system performs functional verification of at least two system elements including the first system element and a second system element;

a network layer in communication with said plurality of communication connections and being configured to select a communication connection from said plurality of communication connections;

a data link layer having a communication connection in communication with said selected communication connection and being configured to communicate with said network layer to provide flow control for said communication connection of said data link layer; and

a physical layer having a communication path in communication with said communication connection of said data link layer and being configured to communicate with [a] the second system element of the design verification system only via the communication system,

wherein the first system element and the second system element are either a physical system element or a virtual system element, and

wherein the physical system element comprises one or more electronic components and the virtual system element comprises software models of the physical system element.

2. (Original) The co-verification interface of claim 1, wherein said application layer is configured to couple with said first system element via a standard coupling interface.

3. (Original) The co-verification interface of claim 2, wherein said standard coupling interface comprises an Application Programming Interface.

4. (Original) The co-verification interface of claim 2, wherein said standard coupling interface comprises a Peripheral Virtual Component Interface.

5. (Original) The co-verification interface of claim 2, wherein said standard coupling interface comprises an Open Core Protocol.

6. (Original) The co-verification interface of claim 1, wherein said co-verification interface is configured to communicate outgoing communication signals from said first system element to said second system element.

7. (Original) The co-verification interface of claim 1, wherein said co-verification interface is configured to communicate incoming communication signals from said second system element to said first system element.

8. (Original) The co-verification interface of claim 1, wherein said application layer is configured to couple with a virtual system element.

9. (Original) The co-verification interface of claim 1, wherein said application layer is configured to open and close each of said plurality of communication connections.

10. (Original) The co-verification interface of claim 1, wherein said plurality of communication connections of said application layer is configured to communicate with a plurality of system elements.

11. (Original) The co-verification interface of claim 1, wherein said application layer is segmented into a plurality of application layer segments each including at least one of said plurality of communication connections.

12. (Original) The co-verification interface of claim 11, wherein at least two of said application layer segments support different types of communication signals.

13. (Original) The co-verification interface of claim 1, further comprising a standard interface for coupling said data link layer with said physical layer.

14. (Original) The co-verification interface of claim 13, wherein said standard interface is disposed substantially between said network layer and said data link layer.

15. (Original) The co-verification interface of claim 1, wherein:

said network layer is configured to select at least one communication connection from said plurality of communication connections;

said data link layer is segmented into a plurality of data link layer segments each having a communication connection in communication with at least one of said at least one

communication connection and being configured to communicate with said network layer to provide flow control for said at least one of said at least one communication connection; and

said physical layer includes a plurality of communication paths, said communication connection of each of said plurality of data link layer segments each being in communication with one of said plurality of communication paths.

16. (Original) The co-verification interface of claim 15, wherein at least two of said data link layer segments support different types of communication signals.

17. (Original) The co-verification interface of claim 1, wherein said physical layer configured to couple with a physical system element.

18. (Original) The co-verification interface of claim 1, wherein said communication path of said physical layer comprises at least one unidirectional communication path.

19. (Original) The co-verification interface of claim 1, wherein said physical layer forms at least one bi-directional communication path comprising a pair of unidirectional communication paths, each being configured to transmit communication signals in opposite directions.

20. (Original) The co-verification interface of claim 1, wherein said physical layer is configured to communicate with said second system element via a second co-verification interface.

21. (Currently amended) A co-verification interface implemented in a design verification system ~~comprising a physical system element and a virtual system element~~, the co-verification interface comprising:

a first application layer having a plurality of communication connections configured to communicate with ~~the~~ a physical system element, wherein the design verification system performs functional verification of at least two system elements including the physical system element and a virtual system element;

a first network layer in communication with said plurality of communication connections of said first application layer and being configured to select a first communication connection from said plurality of communication connections of said first application layer;

a first data link layer having a communication connection in communication with said first communication connection and being configured to communicate with said first network layer to provide flow control for said communication connection of said first data link layer;

a second application layer having a plurality of communication connections configured to communicate with the virtual system element;

a second network layer in communication with said plurality of communication connections of said second application layer and being configured to select a second communication connection from said plurality of communication connections of said second application layer;

a second data link layer having a communication connection in communication with said second communication connection and said communication path and being configured to communicate with said second network layer to provide flow control for said communication connection of said second data link layer; and

a physical layer having a communication path in communication with said communication connection of said first data link layer and with said communication connection

of said second data link layer, wherein the physical system element and the virtual system element communicate only via the physical layer,

wherein the physical system element comprises one or more electronic components and the virtual system element comprises software models of the physical system element.

22. (Currently amended) A design verification system[,] comprising:

a first system element;

a second system element; and

a communication system coupling said first and second system elements, said first system element being coupled with said communication system and configured to communicate with the second system element via a co-verification interface, comprising:

an application layer having a plurality of communication connections configured to communicate with said first system element;

a network layer in communication with said plurality of communication connections and being configured to select a communication connection from said plurality of communication connections;

a data link layer having a communication connection in communication with said selected communication connection and being configured to communicate with said network layer to provide flow control for said communication connection of said data link layer; and

a physical layer having a communication path in communication with said communication connection of said data link layer and being configured to communicate with said second system element,

wherein the design verification system performs functional verification of the first system element and the second system element, the first system element and the second system element being either a physical system element or a virtual system element, and

wherein the physical system element comprises one or more electronic components and the virtual system element comprises software models of the physical system element.

23. (Original) The design verification system of claim 22, wherein said second system element is coupled with said communication system and configured to communicate with the first system element via a second co-verification interface, comprising:

a second application layer having a plurality of communication connections configured to communicate with said second system element;

a second network layer in communication with said plurality of communication connections of said second application layer and being configured to select a second communication connection from said plurality of communication connections of said second application layer; and

a second data link layer having a communication connection in communication with said second communication connection and said communication path and being configured to communicate with said second network layer to provide flow control for said communication connection of said second data link layer.

24. (Previously presented) The design verification system of claim 22, further comprising a third system element, said first system element being coupled with said communication system and configured to communicate with said third system element via a third co-verification interface, comprising:

a third application layer having a plurality of communication connections configured to communicate with said first system element;

a third network layer in communication with said plurality of communication connections of said third application layer and being configured to select a third communication connection from said plurality of communication connections of said third application layer;

a third data link layer having a communication connection in communication with said third communication connection and being configured to communicate with said third network layer to provide flow control for said communication connection of said third data link layer; and

said physical layer having a second communication path in communication with said third communication connection and configured to communicate with said third system element.

25. (Currently amended) A method for coupling system elements of a design verification ~~systems~~ system, comprising:

coupling a first system element with a first plurality of communication connections via a first universal coupling interface;

configuring said first plurality of communication connections to communicate with said first system element;

selecting at least one communication connection from said first plurality of communication connections;

providing flow control for said at least one communication connection; and

transmitting outgoing communication signals from said first system element to a second system element via said at least one communication connection,

wherein the design verification system performs functional verification of the first system element and the second system element, the first system element and the second system element being either a physical system element or a virtual system element, and

wherein the physical system element comprises one or more electronic components and the virtual system element comprises software models of the physical system element.

26. (Original) The method of claim 25, further comprising receiving said outgoing communication signals at said second system element via said at least one communication connection.

27. (Original) The method of claim 26, further comprising:

coupling said second element with a second plurality of communication connections via a second universal coupling interface;

configuring said second plurality of communication connections to communicate with said second system element;

selecting at least one communication connection from said second plurality of communication connections, said at least one communication connection from said second plurality of communication connections being in communication with said at least one communication connection from said first plurality of communication connections; and

receiving said outgoing communication signals at said second system element via said at least one communication connection from said second plurality of communication connections.

28. (Original) The method of claim 25, further comprising receiving incoming communication signals from said second system element at said first system element via said at least one communication connection.

29. (Original) The method of claim 28, further comprising:

coupling said second element with a second plurality of communication connections via a second universal coupling interface;

configuring said second plurality of communication connections to communicate with said second system element;

selecting at least one communication connection from said second plurality of communication connections, said at least one communication connection from said second plurality of communication connections being in communication with said at least one communication connection from said first plurality of communication connections; and

transmitting said outgoing communication signals from said second system element at said first system element via said at least one communication connection from said first plurality of communication connections.